

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A riding simulation system for providing an operator with a pseudo-experience of running conditions of a motorcycle by displaying scenery seen to the rider as a video image on a display based on the operating condition of operation by the operator, said riding simulation system comprising:

a steering handle mechanism gripped and operated by the operator;

a step mechanism comprising a brake pedal and a gear change pedal which are operated by the feet of the operator;

a connection shaft for connecting said steering handle mechanism and said step mechanism to each other, said connection shaft provided to be extendable and contractible along the axial direction thereof; and

a frame body having:

a cylindrical portion, and

at least two main frames having upper portions that are directly attached to the cylindrical portion and lower portions that are connected via a connection frame, the at least two main frames having curved shapes,

wherein all portions of the at least two main frames are disposed forwardly with respect to the steering handle mechanism,

wherein a handle shaft portion of said steering handle mechanism is inserted into an mounted at an upper portion of the cylindrical portion, and the connection shaft is disposed

midway along the connection frame which extends orthogonally with respect to the lower portions of the at least two main frames,

further comprising a vibrator for a dummy engine vibration,

a taper surface portion formed at an inner circumferential surface of a steering handle pipe constituting said steering handle mechanism, said taper surface portion gradually decreasing in diameter from the side of an end portion of said steering handle pipe; and

a bracket having an engaging portion for engagement with said end portion of said steering handle pipe, having an outer circumferential surface gradually decreasing in diameter from the side of said engaging portion, and being inserted into said taper surface portion while holding said vibrator;

wherein the bracket includes a pair of brackets,

wherein each of the brackets includes a recess on an inner surface thereof, and when the brackets are mated together, the recesses of the mating brackets form a space in which the vibrator is disposed wherein recesses have flat inner faces that oppose each other for engaging with left and right flat sides of the vibrator.

2. (Previously Presented) The riding simulation system as set forth in claim 1, wherein said connection shaft is provided to be inclinable relative to each of said main two frames, and to said steering handle mechanism or said step mechanism.

3. (Cancelled)

4. (Previously Presented) The riding simulation system as set forth in claim 1, further comprising means for giving a reaction force in a direction opposite to a turning direction of said steering handle mechanism.

5. (Previously Presented) A riding simulation system for providing an operator with a pseudo-experience of a running condition of a motorcycle by generating a dummy engine vibration based on the operating condition by the operator, said riding simulation system comprising:

a vibrator for the dummy engine vibration in a steering handle mechanism, the vibrator formed with left and right flat sides and curved top and bottom sides, and including an eccentrically mounted weight mounted on a rotatable shaft of a motor of the vibrator extending from an outer end of the vibrator, so that when the rotatable shaft of the motor is rotated, the eccentrically mounted weight causes the dummy engine vibration;

a taper surface portion formed at an inner circumferential surface of a steering handle pipe constituting said steering handle mechanism, said taper surface portion gradually decreasing in diameter from the side of an end portion of said steering handle pipe; and

a bracket having an engaging portion for engagement with said end portion of said steering handle pipe, having an outer circumferential surface gradually decreasing in diameter from the side of said engaging portion, and being inserted into said taper surface portion while holding said vibrator,

wherein the bracket includes a pair of brackets,

wherein each of the brackets includes a recess on an inner surface thereof, and when the brackets are mated directly together, the recesses of the mating brackets form a space in which the vibrator is disposed in a manner such that an axis of the rotatable shaft is maintained in fixed position with respect to the recesses of the brackets,

wherein the recesses of the brackets have flat rectangular-shaped inner faces that oppose each other for receiving the left and right flat sides of the vibrator, and the eccentrically mounted weight is disposed in a portion of the brackets that is separate from each of the recesses.

6. (Previously Presented) A riding simulation system comprising a vibrator for a dummy engine vibration in a steering handle mechanism and providing an operator with a pseudo-experience of a running condition of a motorcycle by generating the dummy engine vibration based on the operating condition by the operator, said riding simulation system comprising:

a bracket having a hollow space, the bracket being screw-engaged with an end portion of a steering handle pipe constituting said steering handle mechanism, wherein said vibrator is inserted into an inside of said steering handle pipe in a state of being held by said bracket,

wherein the vibrator is formed with two parallel flat sides and curved top and bottom sides,

wherein a first portion of the hollow space is enclosed and includes two flat rectangular-shaped inner faces that are parallel to each other for receiving the two parallel flat sides of the vibrator in a manner such that an axis of a rotatable shaft of a motor of the vibrator is maintained in fixed position with respect to the two flat rectangular-shaped inner faces of the first portion of the hollow space,

wherein the vibrator includes an eccentrically mounted weight mounted on the rotatable shaft of the motor, the motor extending from an outer end of the vibrator so as to be disposed in a second portion of the hollow space that is separate from the first portion, and

wherein when the rotatable shaft of the motor is rotated, the eccentrically mounted weight causes the dummy engine vibration.

7 (Currently Amended) A riding simulation system comprising:

a vibrator for a dummy engine vibration in a steering handle mechanism and providing an operator with a pseudo-experience of a running condition of a motorcycle by generating the dummy engine vibration based on the operating condition by the operator, the vibrator including an eccentric cam attached to a rotatable shaft of a motor of the vibrator, so that when the rotatable shaft of the motor is rotated, the eccentrically mounted weight causes the dummy engine vibration,

~~wherein said vibrator is inserted in~~

a bracket into which said vibrator is inserted, and

the bracket being held in an inside of one end portion of a steering handle pipe constituting said steering handle mechanism, and a predetermined gap is formed between an outer circumferential portion of said one end portion of said steering handle pipe and a steering handle grip attached to said outer circumferential portion,

~~wherein the bracket includes~~ including a pair of brackets,

~~wherein each of the brackets includes~~ including a recess on an inner surface thereof, and when the brackets are mated directly together, the recesses of the mating brackets form an enclosed space in which the vibrator is disposed in a manner such that an axis of the rotatable shaft is maintained in fixed position with respect to the recesses of the brackets, and

wherein the vibrator is formed with left and right flat sides and curved top and bottom sides,

wherein the recesses of the brackets have flat, rectangular-shaped inner faces opposing each other for receiving the left and right flat sides of the vibrator, the eccentric cam being disposed in a portion of the brackets that is separate from each of the recesses.

8 (Original) The riding simulation system as set forth in claim 7, wherein said steering handle grip is a throttle grip.

9. (Original) The riding simulation system as set forth in claim 7, wherein said steering handle pipe is comprised of a single pipe communicating one end portion, on which said throttle grip is mounted, and the other end portion to each other.

10. (Original) The riding simulation system as set forth in claim 8, wherein said steering handle pipe is comprised of a single pipe communicating one end portion, on which said throttle grip is mounted, and the other end portion to each other.

11. (Previously Presented) A riding simulation system for providing an operator with a pseudo-experience of running conditions of a motorcycle by displaying scenery seen to the rider as a video image on a display based on an operating condition upon an operation by the operator and detecting a gear change by a sensor provided at a gear change pedal, said riding simulation system comprising:

a step mechanism which is operated by a foot of the operator;

a connection shaft for connecting said handle mechanism and said step mechanism to each other,

a frame portion including a cylindrical portion into which a handle shaft portion of the handle mechanism is inserted, and at least two curved main frames directly connected to the cylindrical portion,

the at least two curved main frames being connected via a connection frame extending laterally between lower portions of the two main frames, and the connection shaft is mounted along a central portion of the connection frame which extends orthogonally with respect to the lower portions of the two main frames, and

further comprising:

a click generator adapted to generate a click feeling similar to a gear change in an actual motorcycle when a gear change is made by operating said gear change pedal,

wherein the click generator comprises a support member disposed between a cover member and a support plate, and a ball member disposed in a hole formed in a shaft projecting from a support member, the cover member having a hole portion formed therein in which the ball member is engaged when said gear change pedal is in a center position.

12. (Previously Presented) The riding simulation system as set forth in claim 11, when said gear change is made by operating said gear change pedal, said ball member is released from said hole portion and thereafter again engaged in said hole portion, whereby a click sound and a vibration are generated.

13. (Currently Amended) A riding simulation system for providing an operator with a pseudo-experience of running conditions of a motorcycle by displaying scenery seen to the rider as a video image on a display based on an operating condition of a dummy operating mechanism operated by the operator, said riding simulation system comprising:

a handle mechanism for operating a steering handle with a handle shaft portion as a turning fulcrum by said operator,

a step mechanism which is operated by the feet of the operator;

a connection shaft for connecting said handle mechanism and said step mechanism to each other,

a frame portion including a cylindrical portion into which the handle shaft portion is inserted, and first to third main frames directly connected at equal angular intervals to upper left, right, and front sides of the cylindrical portion, the first to third main frames being adapted to support said steering handle shaft portion, and

a single spring for giving a reaction force in a direction opposite to the turning direction of said steering handle when said steering handle is operated, wherein said single spring is provided with a pair of clamping portions projected outwards from said steering handle shaft portion so as to clamp external surfaces of one of the main frames therebetween,

wherein all portions of the first to third main frames are disposed forwardly with respect to the steering handle mechanism, and the first and second main frames are connected via a connection frame which extends orthogonally with respect to lower portions of the first and second main frames,

wherein the connection shaft is mounted along a central portion of the connection frame extending between the lower portions of the at first and second main frames further comprising a vibrator for a dummy engine vibration,

a taper surface portion formed at an inner circumferential surface of a steering handle pipe constituting said steering handle mechanism, said taper surface portion gradually decreasing in diameter from the side of an end portion of said steering handle pipe; and

a bracket having an engaging portion for engagement with said end portion of said steering handle pipe, having an outer circumferential surface gradually decreasing in

diameter from the side of said engaging portion, and being inserted into said taper surface portion while holding said vibrator;

wherein the bracket includes a pair of brackets,

wherein each of the brackets includes a recess on an inner surface thereof, and when the brackets are mated together, the recesses of the mating brackets form a space in which the vibrator is disposed wherein recesses have flat inner faces that oppose each other for engaging with left and right flat sides of the vibrator.

14. (Original) The riding simulation system as set forth in claim 13, wherein elastic members are interposed between said pair of clamping portions of said spring and said frame.

15. (Cancelled)

16. (Currently Amended) The riding simulation system as set forth in ~~claim 3~~ claim 1, further comprising:

a bracket having a hollow space, the bracket being screw-engaged with an end portion of a steering handle pipe constituting said steering handle mechanism, wherein said vibrator is inserted into the inside of said steering handle pipe in the state of being held by said bracket,

wherein the vibrator includes an eccentrically mounted weight extending from an outer end of the vibrator so as to be disposed in the hollow space.

17. (Previously Presented) The riding simulation system as set forth in claim 4, further comprising:

a single spring for giving a reaction force in a direction opposite to the turning direction of said steering handle when said steering handle is operated, wherein said single spring is provided with a pair of clamping portions projected outwards from said steering handle shaft portion so as to clamp external surfaces of one of the at least two main frames therebetween.

18. (Previously Presented) The riding simulation system as set forth in claim 5, further comprising:

a step mechanism comprising a brake pedal and a gear change pedal which are operated by the feet of the operator;

a connection shaft for connecting said steering handle mechanism and said step mechanism to each other, said connection shaft provided to be extendable and contractible along the axial direction thereof; and

a frame body having a cylinder portion and at least two main frames,

wherein said steering handle mechanism is supported by the cylinder portion and the connection shaft is disposed midway between and is supported by lower portions of two of

the first to third main frames.

19. (Previously Presented) The riding simulation system as set forth in claim 13,
wherein the step mechanism comprises a brake pedal and a gear change pedal which
are operated by the feet of the operator;
said connection shaft is provided to be extendable and contractable along the axial
direction thereof; and
wherein the connection shaft is inclinable by a predetermined amount relative to
each of the first to third main frames.

20. (Previously Presented) The riding simulation system as set forth in claim 11,
wherein the click generator is part of the step mechanism which includes a gear change pedal
unit, the gear change pedal unit also including a step adapted to accommodate the foot of the
operator, the step and the gear change pedal being disposed on one side of a mount plate, and
the shaft accommodating the ball member being disposed on an opposite side of the mount
plate.